

Healcerion Co.

Bringing Affordable, High-Quality Medical Care to Remote Locations with MAX2082 AFE and MAX4968B Analog Switches

Founded in 2012 in South Korea by Dr. Benjamin Ryu, Healcerion provides handheld ultrasound devices for doctors, nurses, and paramedics in low-resource settings. The company's battery-operated SONON device weighs less than a pound, easily connects to a smartphone, and has a cloud-based image exchange system for telementoring. The output via a mobile app is a high-quality ultrasound image which can be used as a diagnostic guide for unskilled users. While ultrasound machines typically sell for up to \$90,000, the SONON device will be priced at about 10% of this rate. With Healcerion's device, medical workers have a solution that can help save many lives, such as those of pregnant women and their babies in the developing world or the injured in emergencies worldwide.



Healcerion's SONON handheld ultrasound connects to a smartphone to support more accessible healthcare.

Challenge

- Needed small, low-power components to address signal processing

Solution

- MAX2082
- MAX4968B

Benefits

- Met functionality, low-power, and small form factor requirements

The company is committed to delivering accurate, timely diagnostic testing results and actionable information to support superior patient care. For SONON and other achievements, the company has been honored with first place in the 2012 Korea Startup Contest, the Most Innovative Award from the Korean government, and the Global Venture Company Award.

"Dr. Ryu's vision was to create devices that make healthcare more accessible to patients around the world," noted Anakin Choung, the company's COO.

CUSTOMER SUCCESS STORY: HEALCERION CO.



“When we get letters from doctors working in remote areas like Africa, stating that they were very thankful, we are very proud of what we are doing.”

- Anakin Choung, COO, Healcerion Co.

Design Challenges

When founding Healcerion five years ago, the design team was planning to develop the world’s first wireless ultrasound device. At that time, the team needed technology to address signal processing of the ultrasound. To enable battery-powered operation in a handheld form factor, the parts for the device had to be small, perform multiple functions, and consume little power, Choung explained.

Solution and Benefits

The Healcerion team found its answer after evaluating a few solutions. “Maxim had a very good octal ultrasound transceiver series suitable for our purpose,” said Choung. The [MAX2082](#) transceiver is optimized for high-channel count, high-performance portable and cart-based ultrasound systems. Designers can achieve high-end 2D and Doppler imaging capability. “Compared to other solutions on the market, the MAX2082 consumes lower power and takes up a smaller amount of space,” said Choung.

The company also uses the [MAX4968B](#) 16-channel, linear, high-voltage analog switches. Available in BGA packages, the switches are ideal for applications that require high-voltage switching controlled by a low-voltage control signal, such as ultrasound imaging. “With Maxim’s chips, we were able to develop a compact ultrasound device that met handheld-type requirements,” said Choung.

The Healcerion team is now busy developing critical advanced features for its solution, such as a cloud service and a diagnosis guide function using machine learning on a mobile app.



Dr. Benjamin Ryu founded Healcerion to create a handheld ultrasound device for healthcare professionals in low-resource environments.

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